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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,628	06/21/2001	Kevin L. Baum	CR00254M	6149
22917	7590	12/08/2004	EXAMINER	AHN, SAM K
MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/886,628	BAUM, KEVIN L.	
	Examiner	Art Unit	
	Sam K. Ahn	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on pre-amendment, 07/02/02.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.
 4a) Of the above claim(s) 7-28 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-6 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 21 June 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>083001</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. The inventions are distinct, each from the other because of the following reasons:

This application contains claims directed to the following patentably distinct species of the claimed invention:

Claims 1-6 are directed to species of configuration in Fig.2.

Claims 7-26 are directed to species of configuration in Fig.5.

Claim 27 is directed to species of configuration in Fig.9.

Claim 28 is directed to species of configuration in Fig.8.

These configurations are independent and distinct from each other.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added.

An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by

37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. Applicant's election without traverse of claims 1-6 in the telephone conversation with Mr. Kenneth A. Haas, Reg. No.42,614 is acknowledged.

Specification

3. For the formality of the application under the present office practice, applicant(s) is required to replace "Claims" with "I or We Claim", "The Invention Claimed Is" (or the equivalent) before the Claims part of the specification of the instant application. See MPEP 608.01(m).

Claim Objections

4. Claims 1-6 are objected to because of the following informalities:

In claim 1, lines 4 and 6, delete "the subcarriers" and insert "the plurality of subcarriers".

In claims 4 and 5, line 2, respectively, delete “the subcarriers” and insert “the plurality of subcarriers”.

In claim 6, line 7, delete “data” and insert “the packet data”.

Claims 2 and 3 directly depend on claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1,3,5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Tellado et al. USP 6,424,681 B1 (Tellado).

Regarding claims 1 and 6, Tellado teaches a method of interference averaging in a multicarrier system comprising providing a plurality of subcarriers (see Fig.5 providing subcarrier $f_0 - f_{N-1}$), transmitting nulls on selected ones of the plurality of subcarriers ($f_1, f_3, f_5 \dots$ wherein the amplitude is zero) during a symbol period, and transmitting data on the remainder of the plurality of subcarriers ($f_0, f_2, f_4 \dots$ wherein the amplitude has corresponding values) during the symbol period (see 206 in Fig.11 and note col.11, lines 21-34).

Regarding claim 3, Tellado teaches all subject matter claimed, as applied to claim 1. Tellado further teaches randomly spacing the nulls on the subcarriers across a channel band (see Fig.5 wherein the subcarriers with zero amplitude are randomly spaced).

Regarding claim 5, Tellado teaches all subject matter claimed, as applied to claim 1. Tellado further teaches offsetting the plurality of subcarriers in frequency as shown in Fig.5 wherein each of the subcarriers have different amplitude being offset for each frequency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tellado et al. USP 6,424,681 B1 (Tellado) in view of Wallace et al., USP 6,473,467 B1 (Wallace).

Regarding claim 2, Tellado teaches all subject matter claimed, as applied to claim 1. Tellado, as explained above, teaches transmitting data or nulls on selective subcarriers. However, Tellado does not teach wherein the nulls are spaced evenly on the subcarriers across a channel band. Wallace also teaches

transmitting nulls and data on selective subcarriers (see Fig.1C). By having four transmitting antennas four sets of subcarriers each transmit nulls and data. For Tx1, the nulls are evenly spaced apart by skipping the subcarriers of 0,4,8...24. Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Tellado's system by having plurality of transmitting antennas thus separating the subcarriers into different sets for the purpose of increasing the transmission data rate. By combining the two teachings, the subcarriers of Tellado may be aligned as such taught by Wallace.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tellado et al. USP 6,424,681 B1 (Tellado) in view of Sonning et al., USP 6,781,976 B1 (Sonning).

Regarding claim 4, Tellado teaches all subject matter claimed, as applied to claim 1. Tellado, as explained above, teaches transmitting data or nulls on selective subcarriers. However, Tellado does not explicitly teach offsetting the plurality of subcarriers in time. Sonning also teaches transmission of data in plurality of subcarriers or channels (see Fig.2-1) wherein each of the channels are time-offset (note col.13, lines 19-26). Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Tellado's transmission of subcarriers by offsetting in time, as taught by Sonning for the purpose of reducing interference between the subcarriers (as taught by Sonning, note col.2, lines 41-43).

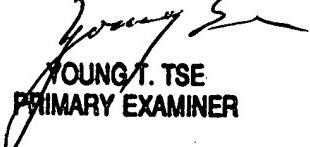
Art Unit: 2637

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn
12/3/04


YOUNG T. TSE
PRIMARY EXAMINER